

CLAIMS

We claim:

1. A device for trapping airborne water or ice particles in a refrigeration unit, comprising:
 - an evaporator including a plurality of coils, and
 - a trapping device disposed between said evaporator and airflow directed toward said evaporator, said trapping device intercepting liquid water or ice particles that would otherwise accumulate on said plurality of coils.
2. The device of claim 1, wherein said refrigeration unit is a freezer.
3. The device of claim 2, wherein said freezer is a walk-in freezer.
4. The device of claim 1, wherein said trapping device comprises a filter including at least one metallic element on a surface or within the media of said filter.
5. The device of claim 4, wherein said metallic element is a wire.
6. The device of claim 4, wherein said system includes a motor for translating said filter relative to said airflow.

7. The device of claim 6, further comprising at least one scraper.
8. The device of claim 7, wherein said at least one scraper is spring-loaded.
9. The device of claim 4, further comprising at least one electrical power source, wherein said metallic element is heated by said power source to melt ice on said filter.
10. The device of claim 9, wherein said electrical power source is an electrical contact brush.
11. The device of claim 10, wherein said electrical contact brush is spring-loaded.
12. The device of claim 1, further comprising at least one control unit for controlling said device, said control unit being at least one selected from the group consisting of a time clock, a differential pressure controller and an optical sensor.
13. The device of claim 1, further comprising condensate drainage piping.
14. The device of claim 13, wherein said condensate drainage piping is heat-traced.

15. A system for trapping airborne water or ice particles in a refrigeration unit, said system comprising:

an evaporator including a plurality of coils, and
a trapping device disposed between said evaporator and airflow directed toward said evaporator, said trapping device intercepting liquid water or ice particles that would otherwise accumulate on said plurality of coils.

16. A method for trapping airborne water or ice particles in a refrigeration unit, comprising the steps of:

providing a trapping device interposed between an evaporator comprising a plurality of coils and airflow directed toward said evaporator, and
directing said airflow toward said trapping device, wherein said trapping device intercepts liquid water or ice particles that would otherwise accumulate on said plurality of coils.

17. The method of claim 16, further comprising the step of actively removing ice that accumulates on said trapping device.